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The Effect of Dribbling Training on Basic Handball Skills of Sports and Health Education Students

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Abstract

In the Handball course for the 2021 cohort, students were found to have suboptimal performance, particularly in basic skills such as dribbling. This study aims to examine the effect of dribbling training (X) on handball basic skills (Y). The research employed an experimental method with a one-group pretest–posttest design. The population consisted of 43 PORKES students from the 2021 class, and purposive sampling was applied to include only male participants, resulting in a sample of 12 students. The research instrument used a 40-meter dribbling test developed by Susanto. Data analysis used an independent t-test with a significance level of $\alpha = 0.05$. The results indicated a significant improvement in students' dribbling performance, with an average time reduction of 7.19 seconds, from 19.27 seconds in the pre-test to 12.08 seconds in the post-test. Statistical analysis showed tcount = 24.623 > ttable = 1.796, confirming a significant effect of the dribbling training. It can be concluded that dribbling training has a positive and significant effect on improving basic handball skills among Sports and Health Education students at Pasir Pengaraian University.

Keywords: dribbling training; handball basic skills; students; sports education

Introduction

Sports are an activity that can unite all elements of society, regardless of ethnicity, race, economic status, or religion. There is no one in the world who doesn't enjoy sports, from low-income to upper-middle income groups. According to Nurhadi et al., (2023:121), handball is a sport that has long been popular in Indonesia. To this day, handball remains a subject taught at the Teacher Training Institute (LPTK) specializing in sports education. As a game, handball has a positive impact on affective aspects, including sportsmanship, a sense of responsibility, a desire to cooperate, quick decision-making, respect for opponents, and so on (Setiawan et al., 2018:91). This is certainly in line with the goals of national education. Article 3 of Law Number 11 of 2022 concerning Sports states that "Sports functions to develop physical, spiritual, and social abilities and to shape the character and personality of a dignified nation." Based on this article, it can be

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concluded that teaching handball at LPTK is a step to develop physical, spiritual and social abilities, as well as forming the character and personality of students.

The importance of knowledge in life drives people to seek information through the learning process. Learning activities generally take place in schools and universities. In universities, the knowledge taught is very diverse, one of which is sports and health education. The material covered includes various sports such as soccer, basketball, volleyball, badminton, table tennis, handball, swimming, athletics, first aid, and others. In this study, the researcher focused on the handball course. The handball course at the Faculty of Teacher Training and Education, Pasir Pengaraian University, Sports and Health Education Study Program (PORKES), is a compulsory course for fifth-semester students. The 43 fifth-semester PORKES UPP students are the class of 2021 and are currently actively studying.

Handball is a game played by two teams of seven players, who throw and shoot the ball (Karim et al., 2023:1501). The gameplay is similar to basketball, but to score, the ball must cross the goal line, as in futsal. Kurniawan, in Mustaqim (2018:53), explains that handball is a team sport played by two teams of seven players each (six players and one goalkeeper) who attempt to score goals by putting the ball into the opposing team's goal. The game is similar to soccer, but the ball is moved using the hands, not the feet. Sumarsono, Anisah, & Iswahyuni (2019:4) add that handball is generally played at a fast pace, requiring supporting skills. There are two general rules for handball: 11-player (outdoor) and 7-player (indoor or outdoor). Seven-player handball is more developed and has been featured in the Olympics.

Muchlisin, in Firdaus, Zawawi, & Dwijayanti (2020:822), states that a handball field measures 40 meters x 20 meters with a center line and two goals on the short side. Over time, handball has begun to develop in Indonesia, particularly in Central Java, with the establishment of the Central Java Handball Association (ABTI) in 2013. Currently, nearly 20 city and district associations have been established and are still in the application process. It's a proud achievement that in 2018, handball was included in the 2018 Surakarta Provincial Sports Week (PORPROV). According to Valentina & Rahayu (2025:79), the governing body for handball in Indonesia is the Indonesian Handball Association (ABTI). Internationally, it is known as the International Handball Federation (IHF). Based on these expert opinions, it can be concluded that handball is a team sport played by seven players (indoor/outdoor) or eleven players (outdoor). Handball is primarily a team sport played by the hands to control and pass the ball, and shares similarities with several other sports.

Basic handball techniques include running, jumping, throwing and catching, dribbling, and shooting. According to Hermansah (2018:36), players who possess good basic techniques tend to be good at handball. There are also factors that influence this ability, namely external and internal factors. According to Purnomo et al., (2023:63), one external factor that affects basic handball skills in students is inadequate facilities. These limited facilities can hinder the process of practicing basic techniques, including dribbling, because students do not have a training environment that meets game standards. As a result, the quality of training is not optimal and motor skill development is less than optimal.

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Internal factors include a lack of student interest in learning basic handball skills. Students tend to be lazy about practicing and rely solely on their limited skills without striving to improve, especially in basic techniques such as dribbling, passing, and shooting. Of these basic techniques, dribbling is one of the most dominant and quite difficult. According to Henjilito et al., (2022:2062), this is because it requires good hand-eye coordination, as well as precision in bouncing the ball to ensure the bounce is accurate and remains under player control. According to Putra (2020:6), dribbling involves more than just carrying the ball across the court, but also dealing with a tough opponent, requiring players to have good dribbling skills. Meanwhile, Susanto (2017:18) explains that dribbling is the skill of dribbling the ball with the aim of attacking and getting the ball closer to the shooting area. In handball, the dribbling technique is known as "three steps per bounce."

According to Utomo (2021:15), the basic dribbling techniques in handball are:

1. Bend your knees approximately 120 degrees with your body in a balanced position.
2. Open your fingers when releasing or receiving the ball.
3. Bounce the ball with your fingers, not your palm.
4. The bouncing motion originates from your wrist.
5. Lean your body slightly forward, facing the direction of the bounce.
6. The bounce height is parallel to your waist and knees.
7. When blocking an opponent, your body faces the opponent.

The way to dribble is to bounce the ball with one hand approximately one meter in front of the advancing player. The ball is bounced with a flick of the wrist and released at the last moment it touches the fingertips. Dribbling practice should be done systematically, starting with simple movements and working up to more complex ones. In a study by Yani et al. (2022:2124), it was explained that one of the obstacles players often experience when dribbling on an outdoor field is the uneven surface, which increases the difficulty of dribbling. This condition requires players to have better ball control and the ability to adapt to unpredictable bounce directions.

Based on interviews with fifth-semester PORKES students from the class of 2021, the handball lecture process is still less than optimal. This is because practical lectures on the field are only conducted three times. Lecturers only provide basic material such as dribbling, passing, and shooting. The passing techniques taught are also similar to those in basketball (chest pass, bounce pass, overhead pass), rather than the typical handball passing techniques such as short pass, long pass, and side pass. The researchers also observed that students' dribbling skills are quite good technically, but their speed still needs to be improved, as handball requires players to dribble quickly to make it difficult for opponents to capture or anticipate the ball. To improve basic dribbling skills, the researchers planned a 40-meter dribbling drill.

The lecturer had actually provided some theory on basic handball skills in class before the on-field practice. However, the students' skill levels were still relatively low, possibly due to several factors:

1. Students' psychomotor skills were still low.
2. Students' reasoning skills were still lacking.

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3. The material presented was not structured progressively or in stages.

Therefore, students still had difficulty mastering basic handball skills. Considering the identified gaps in learning outcomes, a more systematic and progressive training approach is required to enhance students' mastery of fundamental handball techniques. One of the essential components that must be prioritized is improving students' dribbling performance, particularly in relation to speed, ball control, and decision-making during movement. Therefore, implementing a targeted and structured dribbling training program, such as the 40-meter dribbling drill planned by the researcher, is expected to help students develop better technical execution and fulfill the competency standards of handball learning in higher education. This effort serves as an important step in supporting the achievement of psychomotor objectives in the Handball course and ensuring that students are better prepared to apply their skills effectively in real game situations.

Research Methods

The method used in this research is an experimental method. According to Irfan & Kasman (2021:183–184), experimental research seeks to determine the effect of one variable on another under strictly controlled conditions. The purpose of the experimental method is to establish a causal relationship between the independent and dependent variables. The research design used in this study is a "One-Group Pretest-Posttest Design." This design involves a pretest (initial test) before the treatment is administered and a posttest (final test) after the treatment is administered. Thus, a comparison between the pretest and posttest results can demonstrate the effect of the treatment on the research subjects.

This research design can be illustrated in the following schematic form:

Figure 1. Research Design

Researchers conducted an experiment to examine the influence of the variables studied. The research variables consisted of independent variables and dependent variables. The independent variable in this study was Dribbling Practice as a form of treatment, while the dependent variable was Basic Handball Skills, which were measured through a pre-test and post-test. Experimental methods require a treatment, and in this study, the factor tested was dribbling practice over a distance of 40 meters. This research was conducted from May 2, 2024, to June 2024, at the Multipurpose Field of the Pasir Pengaraian University (UPP) Campus, from 4:00 PM WIB onward. The population in this study was 43 regular class PORKES UPP students from the class of 2021.

Purposive sampling was used as the sampling technique because the researchers only recruited male students. Therefore, the sample size for this study was 12.

The research instrument used for data collection was a handball dribbling skills measurement test. The instrument used was a 40-meter dribbling test developed by Susanto (2017:120). The data

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obtained from the measurements were then processed and analyzed using a statistical approach to determine whether the proposed hypothesis was accepted or rejected. Data collected from the pre-test and post-test were analyzed using normality tests and t-tests, with the following calculation steps:The normality test used the Lilliefors Test, which aims to determine whether the data are normally distributed. The homogeneity of variance test used the F-test to determine whether the data come from a homogeneous population. To examine the effect of dribbling training on basic handball skills of students in the Department of Physical Education and Health at Pasir Pengaraian University, a dependent t-test was used with the t-test formula.

Results and Discussion

Data description is based on research results in the form of quantitative data obtained through pre- and post-tests on the basic handball skills of students in the Department of Physical Education and Health at Pasir Pengaraian University. The variables in this study consisted of dribbling training as the independent variable (X) and basic handball skills as the dependent variable (Y). The experiment was conducted from May 2, 2024, to June 20, 2024. The initial test (pre-test) was conducted on May 2, 2024, while the final test (post-test) was conducted on June 20, 2024, at the multipurpose field on the UPP campus. The treatment was administered 16 times with training frequency three times a week, namely every Tuesday, Wednesday, and Thursday.

Handball Dribbling Pre-test Results

To determine basic handball skills, a 40-meter dribbling test instrument developed by Susanto (2017:120) was used. Before the dribbling training treatment was given to a sample of 12 people (n = 12), the pre-test results were obtained with a maximum value of 18.07 seconds and a minimum of 20.30 seconds. The average value (mean) was 19.27 seconds, a standard deviation of 0.65, and a median of 19.28. After being converted into categorization norms, the frequency distribution of the test results was obtained.

Table 1. Frequency Data Distribution of Dribbling Pre-test Results

No	Interval Class	Absolute Frequency	Relative Frequency (%)
1	18.07 - 18.55	2	17
2	18.56 - 19.04	0	0
3	19.05 - 19.53	6	50
4	19.54 - 20.02	3	25
5	20.03 - 20.51	1	8
	Amount	12	100

Handball Dribbling Post-test Results

Based on the results of the 40-meter dribbling test on 12 samples (n = 12), the maximum dribbling time was 10.97 seconds and the minimum was 14.07 seconds. The average (mean) was

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12.08 seconds, the standard deviation was 1.06, and the median was 11.69. After converting these results into categorization norms, the following frequency distribution was obtained:

Table 2: Frequency Distribution of Dribbling Post-test Results

No	Interval Class	Absolute Frequency	Relative Frequency (%)
1	10.97 - 11.64	6	50
2	11.65 - 12.32	2	17
3	12.33 - 13.00	1	8
4	13.01 - 13.68	1	8
5	13.69 - 14.36	2	17
	Amount	12	100

Based on the frequency distribution of post-test dribbling results from 12 participants, 6 participants (50%) had dribbling times ranging from 10.97 to 11.64 seconds. Furthermore, 2 participants (17%) had dribbling times ranging from 11.65 to 12.32 seconds. One participant (8%) had dribbling times ranging from 12.33 to 13.00 seconds, and another participant (8%) had dribbling times ranging from 13.01 to 13.68 seconds. Meanwhile, two participants (17%) had dribbling times ranging from 13.69 to 14.36 seconds.These results indicate that after treatment, most participants experienced improved dribbling ability with faster dribbling times. The analysis requirements test aims to verify the initial assumptions underlying the use of the analysis of variance technique. These assumptions are that the analyzed data obtained from the sample originates from a normally distributed population, and that the groups being compared come from a homogeneous population. Therefore, a normality test is conducted as a preliminary step. The normality test was conducted using the Lilliefors test at a significance level of 0.05. The results of the analysis requirements test are as follows: The normality test using the Lilliefors method was conducted on the research variables, namely Dribbling Practice (X) and Basic Handball Skills (Y). The results of the normality test for these two variables are shown in Table 3 below.

Table 3: Normality Test for Dribbling Test Results Data

Variable	$L_{observasion}$	L_{table}	Information
Hasil Pre-testdan Post-test	0.1825	0.2420	Normal
Dribbling dengan jarak 40 M	0.2019	0.2420	Normal

Based on Table 3 below, the 40-meter dribbling pre-test data obtained an L-value of 0.1825 and an L-value of 0.2420. This indicates that the calculated L-value is smaller than the L-value, thus concluding that the 40-meter dribbling pre-test data is normally distributed. Furthermore, the 40-meter dribbling post-test data obtained an L-value of 0.2019, which is also smaller than the L-value of 0.2420. Therefore, it can be concluded that the 40-meter dribbling post-test data is also normally distributed. Hypothesis testing was conducted to determine the effect of dribbling

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training on basic handball skills in students of the Pasir Pengaraian University Sports and Health Education program. The statistical test used was a t-test at a significance level of α = 0.05

Table 4: T-Test for Arm Muscle Strength Data

Dribbling 40 M	Average	SD	T_{count}	A	t_{table}	Information
Pre-test	19.27	0.65	24.623	0.05	1.796	Significant
Post-test	12.08	1.06				

Based on Table 4, a summary of the results of the hypothesis testing analysis of the dribbling training conducted through statistical calculations using the t-test formula obtained a calculated t value of 24.623 and a t table of 1.796. Since the calculated t value is greater than the t table value, it can be concluded that H_0 is rejected and H_a is accepted. These results indicate a significant effect of dribbling training on basic handball skills in students of the University of Pasir Pengaraian's Sports and Health Education program.

Discussion

The results of this study indicate that dribbling training has a significant impact on improving students' fundamental handball skills, as demonstrated by the reduced dribbling time between pre-test and post-test measurements. This improvement reflects the positive influence of the 16-session training intervention on enhancing speed, coordination, and ball control. These findings align with Henjilito et al. (2022), who state that dribbling performance requires optimal eye–hand coordination and is improved through consistent practice aimed at controlling ball bounce and movement. The results also reinforce Susanto (2017), who emphasizes that proper dribbling techniques contribute directly to overall game effectiveness in handball. The significant difference observed in the statistical results supports the notion that structured and repetitive training is essential for developing psychomotor abilities related to ball-handling skills. The systematic application of fundamental motor learning principles—such as progressive overload, variability of practice, and adequate feedback—likely supported the positive outcomes observed in this study. Thus, the findings strengthen existing evidence that intensive fundamental skill training can effectively boost students' performance in handball and contribute to supporting learning outcomes in sports education programs.

Furthermore, the improvement shown in this study suggests that dribbling training not only enhances technical skills but also supports motor learning processes, particularly in developing movement accuracy and efficiency. According to motor learning theory, repetitive practice with appropriate task variation allows learners to refine movement patterns and reduce execution errors. In the context of handball, this means that the more frequently students perform dribbling drills with proper guidance, the better they are able to stabilize their technique and maintain ball control under dynamic conditions. This finding is consistent with Schmidt & Lee (2014), who explain that continuous skill rehearsal stimulates neuromuscular adaptation, leading to more effective movement responses during game situations.

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In addition, the positive effect of the training program may also be influenced by increased motivation and confidence among the students throughout the intervention period. As students observed their progress during training sessions, they likely developed stronger self-efficacy in performing handball skills, which can further contribute to performance improvement. Côté & Hancock (2016) highlight that supportive learning environments and gradual skill mastery encourage students to engage more actively in practice. This suggests that the dribbling training intervention not only improved students' technical proficiency but also supported their psychological readiness to perform better in handball games. Therefore, integrating structured basic technique training into handball learning programs can be considered an essential component for achieving both physical and affective learning outcomes within sports education.

Conclusion

Based on the findings and discussion, it can be concluded that dribbling training has a significant effect on improving fundamental handball skills among Sports and Health Education students at Pasir Pengaraian University. The training intervention resulted in a performance improvement of 7.19 seconds, decreasing the average dribbling time from 19.27 seconds (pre-test) to 12.08 seconds (post-test). Statistical analysis further confirmed a significant difference, with tcount = 24.623 > ttable = 1.796, leading to the rejection of H_0 and acceptance of H_a. Therefore, dribbling training contributes meaningfully to the development of basic handball skills and can be recommended as an effective exercise program for enhancing student performance in handball courses.

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